



## **DEPARTMENT OF TRANSPORTATION**

### **National Highway Traffic Safety Administration**

**[Docket No. NHTSA-2017-0018]**

#### **BMW of North America, LLC--Receipt of Petition for Temporary Exemption from FMVSS No. 108 for Adaptive Driving Beam; BMW of North America, LLC and Volkswagen Group of America--Request for Certain Information to Support Petitions for Adaptive Driving Beams**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), U.S.

Department of Transportation (DOT).

**ACTION:** Notice of receipt of a petition for a temporary exemption of adaptive driving beam (ADB) headlighting systems from certain headlamp requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 108; Lamps, reflective devices, and associated equipment and request for certain information for exemption petitions for ADB headlighting systems.

**SUMMARY:** In accordance with the procedures in 49 CFR part 555, BMW of North America, LLC has petitioned the Agency for a temporary exemption from certain headlamp requirements of FMVSS No. 108 to allow the use of its Glare-Free High Beam Assist, a type of ADB headlighting system. BMW requests the exemption on the basis that it would facilitate the development or field evaluation of a new motor vehicle safety feature providing a safety level at least equal to that of the standard. NHTSA has made no judgment on the merits of the application. This notice of receipt of an application for

a temporary exemption is published in accordance with statutory and administrative provisions.

We also request additional information from BMW, Volkswagen (for which the Agency previously published a notice of receipt of an exemption petition for an ADB headlighting system) and other manufacturers who petition for similar exemptions for ADB systems.

**DATES:** You should submit your comments not later than **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**FOR FURTHER INFORMATION CONTACT:** John Piazza, Office of the Chief Counsel, NCC0200, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. Telephone: 202-366-2992; Fax: 202-366-3820.

**ADDRESSES:** We invite you to submit comments on the application described above. You may submit comments identified by docket number in the heading of this notice by any of the following methods:

- Fax: 1-202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, Room W12-140, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590.
- Hand Delivery: 1200 New Jersey Avenue, S.E., West Building Ground Floor, Room W12-140, Washington, D.C., between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.
- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.

Instructions: All submissions must include the agency name and docket number. Note that all comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided. Please see the Privacy Act discussion below. We will consider all comments received before the close of business on the comment closing date indicated above. To the extent possible, we will also consider comments filed after the closing date.

Docket: For access to the docket to read background documents or comments received, go to <http://www.regulations.gov> at any time or to 1200 New Jersey Avenue, S.E., West Building Ground Floor, Room W12-140, Washington, D.C. 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays. Telephone: 202-366-9826.

Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78) or you may visit <http://www.dot.gov/privacy.html>.

Confidential Business Information: If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given under FOR FURTHER INFORMATION CONTACT. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above. When you send a comment containing information claimed to be confidential business

information, you should include a cover letter setting forth the information specified in our confidential business information regulation (49 CFR Part 512).

## **SUPPLEMENTARY INFORMATION:**

### **I. Background**

In 2016, Volkswagen Group of America (Volkswagen) submitted a petition for an exemption from certain requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 108; Lamps, reflective devices, and associated equipment, to allow the use of ADB headlights. NHTSA published a notice of receipt of this petition on September 11, 2017 (82 FR 42720) and provided a 30-day comment period. BMW of North America, LLC (BMW) has submitted a similar petition, dated October 27, 2017, for an ADB system. Since the petitions are similar, we are placing them in the same docket. However, they may or may not be jointly decided.

This notice accomplishes two things. First, it serves as a notice of receipt of BMW's petition. Second, it requests additional information from both Volkswagen and BMW. In addition, if other manufacturers submit similar petitions for ADB systems, we ask that they furnish the information detailed in this notice. As we note below, the requested information is not required, but it will assist the Agency in determining whether it can make the findings required in order to grant exemptions for ADB systems.

### **II. Statutory Authority for Temporary Exemptions**

The National Traffic and Motor Vehicle Safety Act (Safety Act), codified at 49 U.S.C. Chapter 301, provides the Secretary of Transportation authority to exempt, on a temporary basis and under specified circumstances, motor vehicles from a motor vehicle

safety standard or bumper standard. This authority is set forth at 49 U.S.C. 30113. The Secretary has delegated the authority for implementing this section to NHTSA.

The Safety Act authorizes the Secretary to grant a temporary exemption to a vehicle manufacturer under certain conditions. Under the conditions relevant to this petition, the Secretary may grant a petition on finding that the exemption is consistent with the public interest and with the Safety Act, and that the exemption would make easier the development or field evaluation of a new motor vehicle safety feature providing a safety level at least equal to the safety level of the standard.<sup>1</sup>

NHTSA established 49 CFR Part 555, Temporary Exemption from Motor Vehicle Safety and Bumper Standards, to implement the statutory provisions concerning temporary exemptions. The requirements specified in 49 CFR 555.5 state that the petitioner must set forth the basis of the application by providing the information required under Part 555.6, and the reasons why the exemption would be in the public interest and consistent with the objectives of 49 U.S.C. Chapter 301.

A petition on the basis that the exemption would make easier the development or field evaluation of a new motor vehicle safety feature providing a safety level at least equal to the safety level of the standard must include the information specified in 49 CFR 555.6(b). The main requirements of that section include:

(1) A description of the safety or impact protection features, and research, development, and testing documentation establishing the innovational nature of such features;

(2) An analysis establishing that the level of safety or impact protection of the feature is equivalent to or exceeds the level of safety or impact protection

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<sup>1</sup> 49 U.S.C. 30113(3).

established in the standard from which exemption is sought, including the following: A detailed description of how a vehicle equipped with the safety or impact protection feature differs from one that complies with the standard; if applicant is presently manufacturing a vehicle conforming to the standard, the results of tests conducted to substantiate certification to the standard; and the results of tests conducted on the safety or impact protection features that demonstrates performance which meets or exceeds the requirements of the standard;

(3) Substantiation that a temporary exemption would facilitate the development or field evaluation of the vehicle;

(4) A statement whether, at the end of the exemption period, the manufacturer intends to conform to the standard, apply for a further exemption, or petition for rulemaking to amend the standard to incorporate the safety or impact protection features; and

(5) A statement that not more than 2,500 exempted vehicles will be sold in the United States in any 12-month period for which an exemption may be granted pursuant to this paragraph.

### **III. Overview of BMW's Petition**

BMW has submitted a petition asking the Agency for a temporary exemption from certain headlamp requirements of FMVSS No. 108 for vehicles equipped with its Glare-Free High Beam Assist, a type of ADB headlamp system. ADB is defined by SAE International (SAE) as a long-range forward visibility light beam that adapts to the presence of opposing (i.e., approaching from the opposite direction) and preceding

vehicles by modifying portions of the projected light in order to reduce glare to the drivers and riders of those vehicles. BMW is targeting deployment of its Glare-Free High Beam Assist for the 2019 model year.

In order to do so, BMW requests an exemption from the requirements of S9.4 and S10.14.6 of FMVSS No. 108. S9.4 requires that a vehicle have a means of switching between lower and upper beams designed and located so that it may be operated conveniently by a simple movement of the driver's hand or foot; that the switch have no dead point; and, except as provided by S6.1.5.2, that the lower and upper beams must not be energized simultaneously except momentarily for temporary signaling purposes or during switching between beams. S10.14.6 specifies the photometry requirements for integral beam headlighting systems. BMW seeks an exemption from the requirement of S9.4 that prohibits the simultaneous energization of the lower and upper beams. BMW seeks an exemption from the upper beam photometry requirements of S10.14.6 of FMVSS 108. The photometry requirements specify minimum and maximum photometric intensities of the upper beam light that may not be met by the Glare-Free High Beam Assist.

The basis for the application is that the exemption would make easier the development or field evaluation of a new motor vehicle safety feature providing a safety level at least equal to that of the standard. BMW explains how the Glare-Free High Beam Assist operates and the safety benefits it believes the system would offer. BMW explains that the safety benefit is that it incorporates the advantages of upper beams, thereby enhancing visibility, while avoiding the disadvantages of upper beams by adjusting the light distribution and intensity to eliminate unnecessary glare for other road

users. BMW intends to bring the Glare-Free High Beam Assist into the U.S. market utilizing its BMW Laserlight system. The BMW Laserlight is currently produced on the BMW i8 and features an FDA-approved laser that provides the upper beam function.

In order to establish the innovative and safety-improving nature of the Glare-Free High Beam Assist, BMW references research and testing documentation, including the following: an analysis conducted by BMW of real-world upper beam use in vehicles with and without Glare-Free High Beam Assist; a study comparing the glare of low beam, upper beam, and glare-free upper beams illumination under different road conditions; and the research referenced in the pending Toyota and Volkswagen petitions.<sup>2</sup>

BMW explains that it first offered its Glare-Free High Beam Assist in the European market in March 2012 and has since produced approximately 612,131 vehicles so equipped. In that time, BMW received 417 customer complaints related to the headlamps and/or camera system, equating to a rate of less than 0.07%. (BMW states that because these complaints encompass all claims related to the subsystems shared by the traditional High Beam Assist function, the Glare-Free High Beam Assist system may only represent a subset of those total claims.) BMW also states that since the introduction of the Glare-Free High Beam Assist in 2012 it has made numerous improvements to the system. BMW states that all vehicles sold under the exemption will meet the SAE standard for ADB systems, SAE J3069 JUN2016. BMW also provides a compliance test report to demonstrate that vehicles it currently manufactures comply with the headlamp-related requirements of FMVSS No. 108.

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<sup>2</sup> In March 2013, Toyota submitted a petition for rulemaking to amend FMVSS No. 108 to permit manufacturers the option of equipping vehicles with ADB technology (Docket No. NHTSA-2013-0004).



BMW states that a temporary exemption would facilitate the development and field evaluation of the Glare-Free High Beam Assist. BMW states that testing of the system with consumers in a diverse set of conditions would provide invaluable information about the system that could not be obtained through testing using professional evaluators in laboratory conditions. BMW states that it would obtain data through field testing concerning the amount of time that the headlights are on, the time that the system is activated, the time that full upper beams from the system are on, and the time that the Glare-Free High Beam Assist is activated.

BMW requests a two-year exemption and states that it will not sell more than 2,500 exempted vehicles in any 12-month period covered by the exemption. If the law concerning the maximum number of exempted vehicles should change before the present exemption is approved, BMW requests that NHTSA extend BMW's maximum allowable production limit to reflect those changes, if warranted.

#### **IV. Completeness of BMW's petition**

Upon receiving a petition, NHTSA conducts an initial review of the petition to determine whether it is complete and whether the petitioner appears to be eligible to apply for the requested exemption. The Agency has tentatively concluded that the petition from BMW is complete and that BMW is eligible to apply for a temporary exemption. The Agency has not made any judgment on the merits of the application, and is placing a copy of the petition and other related materials in the docket. However, as explained below, we are requesting additional information from BMW (as well as from Volkswagen and other manufacturers who submit exemption petitions for ADB headlamps).

**V. Request for additional information from BMW and Volkswagen as well as any subsequent petitioners for ADB systems**

Although we have concluded that the petitions submitted by Volkswagen and BMW are technically complete (*i.e.*, contain the information required by § 555.5), NHTSA is seeking additional information from both petitioners. While the information we are requesting is not required, its submission will improve the persuasiveness of the petitions and may influence the timing and nature of the Agency's ultimate decisions on the petitions. If either Volkswagen or BMW does not intend to send in the additional information identified below, we ask that it notify the Agency in writing.

In addition, the Agency requests that any future exemption petitions for ADB systems include this information.

Additional Information Requested

We request that Volkswagen and BMW (unless they have already provided the identified information to the Agency), as well as any future petitioners for ADB systems, provide the Agency with information (such as test reports, evaluations, and narrative explanations) demonstrating the following:

1. Their system meets the requirements of Section 6.5 in SAE J3069 JUN2016. This requirement specifies a variety of test drives of a vehicle equipped with ADB and requires that the measured illuminance must remain below the maximum values specified in the standard.<sup>3</sup>

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<sup>3</sup> These values are based on NHTSA-sponsored research. See Michael J. Flannagan & John M. Sullivan. 2011. Feasibility of New Approaches for the Regulation of Motor Vehicle Lighting Performance. Washington, DC: National Highway Traffic Safety Administration.

2. Within the ADB Non-Glare Zone,<sup>4</sup> their system meets the photometric intensity requirements specified in Table XIX-a, XIX-b, or XIX-c (*i.e.*, the lower beam photometric test points) in FMVSS No. 108, as specified in Table II of that standard for the applicable headlamp unit and aiming method, when tested according to the procedure of S14.2.5 of that standard, and, for replaceable bulb headlighting systems, when using any replaceable light source designated for use in the system under test.
3. Outside the ADB Non-Glare Zone, their system meets the photometric intensity requirements specified in Table XVIII in FMVSS No. 108 (*i.e.*, the upper beam photometric test points) as specified in Table II of that standard for the applicable headlamp unit and aiming method, when tested according to the procedure of S14.2.5 of that standard, and, for replaceable bulb headlighting systems, when using any replaceable light source designated for use in the system under test.
4. Their vehicle is equipped with a lower beam that complies with all photometric and other requirements of FMVSS No. 108 for the lower beam.
5. Their vehicle is equipped with an upper beam that complies with all photometric and other requirements of FMVSS No. 108 for the upper beam.
6. Their headlighting system will never provide a beam pattern other than one that meets the criteria of either (i) Item 2 and Item 3 above; or (ii) Item 4 above; or (iii) Item 5 above;
7. Their system contains a manual driver override which is simple to operate and easy to understand.

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<sup>4</sup> As defined in SAE J3069 this is “[t]he area of reduced light intensity in the ADB directed towards opposing or preceding vehicles.”

8. Their system reverts to lower beam if the camera and/or other equipment is obstructed or the system experiences any other malfunction.
9. Unless manually over-ridden by the driver, their lighting systems produces a lower beam compliant with all FMVSS No. 108 lower beam photometric test points at speeds under 25 mph.

For any of the photometric requirements referenced above, NHTSA requests that petitioners provide the measured illuminance values for the specified test points, and not simply state whether the measured illuminance value is a “Pass” or a “Fail.” If the measured illuminance values exceed the specified maximum or fall short of the specified minimum, it would be advantageous to the petitioner to explain these results.

#### **VI. Comment Period**

The agency seeks comment from the public on the merits of BMW’s application for a temporary exemption from S9.4 and S10.14.6 of FMVSS No. 108. We are providing a 30-day comment period.

In addition, when the Agency receives from Volkswagen and BMW either notice that they intend not to submit the requested information or all or part of the requested information, the Agency will publish a notice of availability in the Federal Register and place the submission in the docket. After considering public comments and other available information, we will publish (either jointly or a separately) a notice of final action on the applications in the **Federal Register**.

**Raymond R. Posten**

*Associate Administrator for Rulemaking.*

**BILLING CODE 4910-59-P**

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